

**Notice of Allowability**

Application No.

09/892,069

Examiner

Thien D. Tran

Applicant(s)

GOLDENBERG ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/26/2001.
2. ☒ The allowed claim(s) is/are 1-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>10/12/01</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

## REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

Regarding claims 1, 16, 18 the prior arts fail to teach or fairly suggest a method or means of scheduling upstream data packets utilizing a register interface in a data communication system, wherein the data communication system comprises a current system timer, at least one plurality of upstream hardware registers, and a plurality of upstream data packets, and wherein the upstream data packets have an associated priority value (PV), the method comprising the steps of:

(b) identifying a priority value (PV) associated with the queued upstream data packet that has not been previously stored in an upstream hardware register;

(c) storing the PV identified in step (b) in an available upstream hardware register;

(d) determining whether any upstream hardware register contains a PV corresponding to a current system timer value, in combination with other limitation as specified in the independent claims 1, 16, 18.

Regarding claims 12, 19 the prior arts fail to teach or fairly suggest A method of scheduling upstream data packets utilizing a parallel hardware register interface in a data communication system, wherein the data communication system includes a current system timer, a plurality of customer premise equipment (CPE) in communication with at least one associated and corresponding cable modem, and wherein the at least one

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cable modem has an associated and corresponding cable modem termination system (CMTS), the method comprising the steps of:

creating a new burst information structure (BIS) and storing a time-to-send (TTS) and pointer value in an upstream hardware register, wherein the TTS and pointer values are associated with corresponding upstream data packets;

determining whether any of the TTS values stored in an associated upstream hardware register corresponds with a current system timer value, in combination with other limitation as specified in the independent claims 12, 19.

Regarding claim 13, the prior arts fail to teach or fairly suggest a method of scheduling upstream data packets utilizing a parallel hardware register interface in a data communication system, wherein the data communication system includes a system timer, a plurality of customer premise equipment (CPE) in communication with at least one associated and corresponding cable modem, and wherein the at least one cable modem has an associated and corresponding cable modem termination system (CMTS), the method comprising the steps of:

storing information pertaining to an upstream data packet associated with the new BIS in a available upstream hardware register if a new BIS was determined to be created in step (a);

(d) determining whether a time-to-send (TTS) value associated with the plurality of upstream hardware registers corresponds to a current system timer value;

(e) if any TTS value is associated with the current system timer value, transmitting an upstream data packet that is associated with the TTS, in combination with other limitation as specified in the independent claim 13.

Regarding claim 17, the prior arts fail to teach or fairly suggest an upstream data packet scheduler comprising a hardware register interface for use in a data communication system, wherein the data communication system comprises a system timer, a plurality of upstream hardware registers, and a plurality of upstream data packets, and wherein at least one upstream data packet has an associated and corresponding priority value (PV), comprising:

(c) a register comparator, operatively coupled to the plurality of upstream hardware registers and the system timer, wherein the comparator determines whether any PV stored in the plurality of upstream hardware registers is associated with a current system timer value; and

(d) said scheduler configured to operate with a transmitter; that is operatively coupled to the register comparator and transmits upstream data packets associated with and corresponding to a PV that is associated with the current system timer value, in combination with other limitation as specified in the independent claim 17.

### ***Conclusion***

2. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thien Tran whose telephone number is (571) 272-3156. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

Patent Examiner

Thien Tran

**DUCHO  
PRIMARY EXAMINER**

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9-18-05